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Title: **Opportunities and Challenges of COVID-19 case handling in Bangladesh**

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Bangladesh has stepped up its efforts to strengthen the capacity of the healthcare system following detection of the first few COVID-19 cases in early March. Though Bangladesh have started the preparation to control the pandemic in the country based on National Preparation and Response Plan, it could cover only a small portion of the country's actual needs. With limited resources, expanding healthcare capacity remained a challenge for Bangladesh. The objectives of the study were to identify the opportunities and challenges of the system of keeping the people at risk in quarantine and isolation as well as the referral and admission process of confirmed COVID-19 patients in the hospitals.

This was a qualitative study conducted from June to August 2020 involving different COVID dedicated health care facilities in all eight divisions of Bangladesh. Total 51 in-depth interviews and key informant interviews were conducted over telephone (44) and face-to-face (7) with the service users (patients and their attendants), service providers (physicians and nurses) and relevant experts (MOHFW appointed divisional Advisor).

Findings are on the basis on collected data at the beginning of the pandemic and presently the situation has been improved a lot. Bangladesh faced a lot of challenges at the beginning of the pandemic like many other countries of the world.

All the participants except nurses were men. Age of the participants ranged from 23 to 62 years. Most of the patients and their attendants completed Secondary School Certificate (SSC) or more, were employed.

From the KII, it was obvious that the testing was inadequate from the very beginning and the possible reasons for inadequate testing of COVID-19 revealed from the experts as lack of testing facilities (laboratories) and kits, deficiency of COVID-19 testing skill and technicians, lack of monitoring of testing quality, delay in reporting and fear of getting infected from the testing sites gathering. About 80% service users were unaware of the location and procedure of testing, over half of them (60%) was not interested in testing due to the social stigma and fears of isolation from the community people and family members. Few of the service users were bored due to the delayed test results and repeated false negative results. They also mentioned about the unavailability of the testing facilities in their area.

Regarding contact tracing, the service users reported that no one came to them to know about the persons who came in contact with them after becoming COVID-19 positive. And according to the Experts opinion, though there was contact tracing at the beginning of infection but later it failed due to uncontrolled entry of the expatriate in to the country and increased number of asymptomatic cases in the community.

Form the KII it was found that both the institutional and home quarantine and isolation was not followed properly in our country. The Expert said that people couldn't differentiate between quarantine and isolation. The possible reason behind it was lack of coordination and dissemination of information to aware the general people regarding the term in the right time. People were not informed properly why this quarantine center set up and how the spread of COVID-19 infection occurs. Lack of infrastructure, lack of monitoring by the hospital authority and law enforcement agencies were the identified reasons for failure of institutional quarantine and isolation. On the other hand, lack of community engagement was the main cause of failure of home isolation and quarantine. Scarcity of space at home and the financial constraints were also the reasons behind it. All the Experts strongly emphasized on the community engagement for successful home isolation and quarantine through monitoring of the quarantine system by the local community with making small groups and community quarantine center can be established for people who have limited space in their home.

Regarding the quarantine, most the service providers said that the hospital authority ensured their accommodation facilities during and after the COVID-19 duty period except few doctors who couldn't maintain the quarantine as they had to attend the hospital duty on daily basis. Dissimilarity of the duty roaster in different health care facilities was explored by the interviews. Regarding the accommodation facility for the attendants in the hospitals - 30% of the attendants reported no facilities provided, 40% reported to get facility to stay in a separate room and 30% stayed in the same room with the patients.

There were two types of health facilities – COVID dedicated and normal. Few patients (10%) reported to face lots of difficulties to get admission in the COVID-dedicated hospital. Most of the service users (85%) were satisfied with the hospital facilities and services, yet the rest of them reported in negative way in terms of lack of hospital staffs such as nurses, ward boys, and cleaners, delayed test results, negligence of the doctors and nurses. About 60% of the physicians and nurses reported the availability of ICU, CCU, central oxygen supply system in their hospital, whereas others mentioned that in some cases they could give service up to 15 liter of oxygen due to absence of central oxygen supply and they had to refer the critical patients due to absent of ICU. Regarding the supply of medical equipment, most of the physicians and nurses reported that their hospitals didn't have adequate medical supplies such as PPEs like N-95 masks, hand gloves, shoe covers, oxygen delivery devices, and few medicines. Sometimes they needed to buy masks and gloves personally for themselves, or need to reuse.

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Regarding practice of the case management protocol in the hospital it was found that 56% physicians practices the COVID-19 case management protocol in patient handling with some adjustment based on the local availability, 21% didn't practice and the rest practiced with some limitations. Most (85%) of the physicians and nurses reported that they didn't receive any training on PPE use. They have just learned it from internet, from the hospital authority, online guideline from DG Health, or from the senior doctors.

Finally, it can be said that the COVID 19 case handling system in Bangladesh faced a lot of crucial challenges like: inadequate testing; improper isolation procedure; contact tracing in small scale; poor quarantine facility and delayed hospitalization etc. At the same times identified a lot of opportunities to strengthen our health system in future like: ensure community engagement; adequate training; skilled manpower; proper utilization of the existing health facilities; creation of zoning facilities in hospitals; mandatory mask use by all; mass awareness development.

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